THE AMERICAN CLIMATE AND ENERGY SECURITY ACT

Testimony of
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Commonwealth of Massachusetts
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I. Introduction

Thank you, Chairman Markey and members of the Committee, for the opportunity to testify on behalf of Governor Deval Patrick and the Commonwealth of Massachusetts. Governor Patrick, along with residents and businesses across the Commonwealth, very much appreciates your leadership in addressing both our energy challenges and global climate change. The Commonwealth and the nation are fortunate to be able to tap your experience and knowledge as we work together to craft an energy and climate policy for the 21st century.

We share your view that the time has come for bold action. We must commit ourselves to unleashing the full potential of our nation to solve our energy and climate challenges while growing a new clean energy economy. Your American Climate and Energy Security (ACES) Act makes this commitment. I am here to offer our support for your efforts, and to encourage Congress to move forward with the ACES legislation expeditiously.

I would also like to thank you for the thoughtful approach you have taken to developing a federal-state partnership to advance the goals of clean energy and greenhouse gas reduction. In general, ACES builds on, buttresses and accelerates – but does not supplant – proven state programs on energy efficiency and renewable energy. The ACES legislation also focuses on important new federal minimum standards for building codes and energy efficiency measures. In the case of transmission, ACES recognizes the fundamentally regional nature of electricity markets and provides support for bottom-up, market-based solutions to accelerate renewable energy – and resists calls for top-down, central planning that would replace functioning electricity markets with federal selection of transmission winners and losers regardless of price impacts. In the case of cap-and-trade, ACES establishes a new federal program, but also maintains important roles for states to continue to innovate and reduce greenhouse gas emissions through the many tools at their disposal. We see all of these as important and very positive themes in the ACES bill and look forward to continuing to work with the Committee on this important legislation.

While my staff and I would be happy to assist the Committee on any of the matters in the far-ranging ACES legislation, my testimony is focused primarily on the energy efficiency title.

II. Context in Massachusetts

A confluence of factors makes Massachusetts a natural incubator for the clean energy technology the United States as a whole needs for its future. A lack of indigenous fossil fuel resources and a location at the end of the delivery pipeline translate into high energy prices, which make alternatives to traditional energy sources more price competitive. These factors, combined with strong technology, entrepreneurial and venture capital sectors and a skilled workforce have given rise to university R&D and a growing cluster of firms focused on clean energy. Our energy productivity is one of the highest in the nation, with Massachusetts generating $200 of gross state product for every million BTU consumed, compared with $116 per million BTU consumed for the U.S. as a whole. Massachusetts shows that energy efficiency and economic growth can – and do – go hand-in-hand.

Since taking office in January 2007, Governor Patrick has made clean energy a central part of his economic, energy and environmental strategies. The Green Communities Act (GCA), signed by Gov. Patrick in July 2008, was the first major energy legislation in the state since electricity deregulation in 1997. The GCA refocuses our energy policy on energy efficiency, renewable energy and clean energy technology. The Regional Greenhouse Gas Initiative (RGGI) is the nation's first functioning carbon cap-and-trade system, and we are proud both of its results to date and the opportunity for its initial lessons to be shared with Congress as you consider a national cap-and-trade program. Massachusetts is also one of a handful of states that has already passed a carbon cap of its own – the Global Warming Solutions Act (GWSA), passed by the legislature and signed by Gov. Patrick last summer, which requires the Commonwealth to cut greenhouse gas (GHG) emissions 80% below 1990 levels by 2050. The GWSA also gives us authority to set, by the end of 2010, a 2020 cap at between 10% and 25% below 1990 levels following an administrative proceeding.

Massachusetts has invested in energy efficiency for over three decades and we have seen strong results. For instance, we collect and invest ¼ of a penny from every kWh distributed by our regulated utilities in energy efficiency programs. This totals about $125 million per year for our electric efficiency programs, or about $20 per capita. These programs result in saving energy for about 3.6 cents per kWh saved. As a result of our efficiency work over the last 13 years, these EE investments have resulted in an 8% reduction in our energy consumption.

We are currently in the process of increasing our investment in energy efficiency and transitioning to a market-based system that treats efficiency as an energy resource that competes against power generation on cost to meet load demand. Instead of investing a prescribed sum and getting all the efficiency we could for that amount of money, as we have done in the past, going forward we will be required to invest in all efficiency that is less expensive than supply sources. With efficiency costing 3.6 cents per kWh and supply costing 8 cents per kWh, we expect to see a doubling or tripling of our efficiency investments

over the next several years, if not more. This investment in energy efficiency is also being supported and accelerated by revenues from our participation in the Regional Greenhouse Gas Initiative and will be further advanced by federal economic recovery funding.

This reorientation of our energy markets – requiring our electric and gas utilities to treat energy efficiency as a resource that competes with supply from power plants and gas pipelines on the basis of price – has led our utilities to propose 30, 50, even 100 percent increases in their annual energy efficiency investment plans. This will mean more energy auditors working to identify energy saving opportunities in thousands of homes and businesses across the state; more contractors blowing insulation into our old housing stock; and more plumbers pulling boilers from the 1950s out of basements and installing super-efficient modern heating systems that will cut energy use by a third. In short, all this will mean vast savings for consumers and businesses from reduced energy use and putting people to work, at the same time that it reduces greenhouse gas emissions.

Let me give you some examples of what is happening in Massachusetts. A homeowner named Alex Cheimets is in the final stages of a major renovation. This started – as these things often do – with a small water leak, and ended with a significant retrofit project that is expected to reduce his energy use by half or more, through thorough air sealing of the building envelope and adding four to six inches of foam insulation to the walls and roof of his house, as well as installing an air-to-air heat exchanger and monitoring equipment. His is a typical Massachusetts home – an eighty-year-old two-family house which leaked badly – but will now be a model of what is possible in energy efficiency.

Another example includes near zero energy homes available on Coppersmith Way in Townsend, MA. They are being built by Transformations, Inc., a local builder that specializes in super energy-efficient home construction. During the last two years, Transformations has built seven new homes that use less than half the energy of conventional homes, and have solar panels that generate a significant portion of the electricity they do use. And this is only one example of a growing zero net energy building industry.

Companies as diverse as EBSCO Publishing in Ipswich and Boston Sand and Gravel, visible from the MBTA Orange Line and I-93 in Boston, have installed significant solar photovoltaic arrays to generate clean electricity on site, taking advantage of state and federal incentives.

All kinds of organizations are taking action to become energy leaders. As you well know, Mr. Chairman, Massachusetts is proud of its professional sports teams. In addition to winning six championships in the last seven years, our local sports franchises are dominating the playing field in clean energy as well. The Red Sox use solar thermal energy to heat the water used at Fenway Park. The New England Patriots power the lights at Gillette Stadium with renewable energy, and stadium managers, through paying close attention to site energy use, have cut electricity and natural gas use – and their carbon footprint – by 25% over the last four years. And the TD Banknorth Garden, home to the World Champion Boston Celtics and the Boston Bruins, is implementing a colored LED display strategy for exterior lighting, which will cut consumption about 60% compared with the previous equipment.

Under Governor Patrick's leadership, the Commonwealth has taken a number of other steps to boost energy efficiency:

- Governor Patrick created the first Cabinet-level agency in the country that combines all energy and environmental policy and regulation. Under the Executive Office of Energy and Environmental Affairs, the six environmental and energy regulatory agencies (including the public utility commission, fish & game, environmental protection, parks/land/conservation, agriculture, coastal zone management and energy resources) are able to coordinate their efforts to reduce energy costs and usage, curb greenhouse gas emissions, and tap the economic potential of the rapidly growing clean energy technology sector in Massachusetts.

- Our Department of Public Utilities last summer issued an order "decoupling" utility revenue from sales volume – a process designed to eliminate the economic incentive for utilities to maximize power consumption and equivocate about conservation. This reform will make the distribution utilities full partners in promoting energy efficiency for their customers, fulfilling the efficiency promise of the Green Communities Act.

- In March, Governor Patrick received recommendations from a seventy-plus member Zero Net Energy Building Task Force that convened at his request just over a year ago. Task Force recommendations will enable the state to begin construction of the first state-owned zero net energy building by 2010; point the way toward broad marketability of zero net energy residential and commercial buildings by 2020; and establish standards for statewide adoption of zero net energy buildings for new construction by 2030. I will submit a copy of the task force report for the record for the Committee.

- In 2007, Massachusetts became the first state in the nation to incorporate greenhouse gas emissions into the state environmental review process, a policy that is leading to greater private investment in green buildings. Through the environmental review process, major new real estate projects are now required to analyze alternatives to reduce greenhouse gas emissions and maximize energy savings through better design and construction.

- The new Massachusetts Clean Energy Center, established by the Green Jobs Act, also signed by Gov. Patrick last summer, is developing programs to promote green jobs for low income residents of Massachusetts and has also launched an energy efficiency skills initiative with $5 million to train Massachusetts workers to blow in insulation, install super-efficient equipment, and implement other measures that will enable us to hit our energy and climate goals.

- The Governor has also issued Executive Order 484, entitled "Leading by Example," which requires all state agencies to reduce energy use at state-owned buildings 20 percent by 2012 and 35 percent by 2020. The Executive Order also requires all new construction and major renovation projects to meet the Massachusetts LEED Plus standard, which is based on LEED but sets a higher bar for energy efficiency.

III. Specific Comments on ACES

a. Auction vs. Allocate

Based on our experience in the Regional Greenhouse Gas Initiative (RGGI) and the European experience to date, we believe that Congress should require the auction of all allowances, and designate substantial revenues under the federal program for investments in energy efficiency, clean energy, and transportation efficiency programs. A strong and clear market signal is essential to driving the private investment that will be needed to make the transition to a clean energy economy, and auctioning provides the purest market signal to emitters of greenhouse gases.

Our experience to date under RGGI has shown that the well monitored and free exchange between buyers and sellers of allowances has created a robust market and provided all participants with price clarity. As Congress considers how to apportion the proceeds, we recommend favorable consideration of expanding energy efficiency and other emissions-reduction programs. Energy efficiency has the dual benefit of locking in material saving for consumers and associated reductions in GHG emissions. In Massachusetts, we are investing a minimum of 80% of our RGGI auction proceeds in expanded energy efficiency programs. We have already derived more than $43 million in proceeds from the first three RGGI auctions. To date, we have allocated $22 million for utility-administered energy efficiency programs, $4 million for heating system replacement for low-income households, $10 million for the Green Communities program of funding and technical assistance to municipalities, $2.7 million for additional municipal energy efficiency retrofits and $5 million for energy efficiency training programs.

If the RGGI program is folded into a federal cap and trade program, we believe it is important that the new federal system provide financing for state energy efficiency programs that would otherwise lose funding under this transition. However, the larger point is that state energy efficiency programs are well established channels to deliver energy efficiency results through our regulated utilities. We believe that use of this delivery channel should be expanded significantly in all states regardless of the disposition of the RGGI program. We recommend that Congress make a significant and sustained investment in energy efficiency under ACES and allocate at least 25% of auction revenues to energy efficiency investments.

As you continue to develop the details of the permit auction mechanism under ACES, we also recommend consideration of a price floor as a complementary strategy to the various "safety valve" mechanisms that have been proposed to protect against price volatility. A price floor would maintain a consistent and reliable carbon price signal, assuring consumers and private investors that efforts to reduce emissions would be rewarded with significant avoided allowance costs. The RGGI auctions use a minimum "reserve price" to avoid collusion in the market, but the same mechanism could readily be adapted for the purpose of establishing a reliable price signal. To

maximize the emissions-reducing impact of a price floor, we also recommend that a science-based process be established to determine whether unsold allowances should be permanently retired.

b. Energy Efficiency Resource Standard

The proposed federal Energy Efficiency Resource Standard (EERS) represents an important tool to put energy efficiency resources into the core of energy markets and resource planning. In essence, it requires load serving entities to use energy efficiency investments to reduce total energy consumption – and holds them accountable for compliance with such reductions on an annual basis. Generally speaking, the EERS will do the most to help states that have yet to develop efficiency programs. If not designed carefully, however, it has the potential to slow down states that have already made significant progress on energy efficiency. We believe that ACES handles this set of issues well.

In Massachusetts, for example, we have currently achieved a cumulative 8% reduction in electricity use based on measures taken over the past 10 years. While the compliance periods and baselines would have to be adjusted to the ACES framework, this would be roughly equivalent to the 2017 compliance requirements. This suggests that the ACES requirements are realistic and achievable for all states – and the Committee may wish to provide additional incentives to states to exceed compliance requirements.

A federal EERS will also need robust requirements for measurement and verification of energy savings. Massachusetts has built robust measurement and verification (M&V) requirements into our programs. These are crucial for ensuring, and demonstrating to the public, that energy efficiency investments provide the energy savings that are promised. These also allow for adaptive learning and technology transfer as new technologies and applications are tested and adopted. We encourage consideration of a national efficiency M&V and reporting requirement.

We support the ACES provisions that allow for delegation of authority for administration to states as the primary regulator of electric and gas distribution utilities. In addition, the definition of cost effective measures found in Section 611 (b) 8, is sound, but could be made stronger if the cost measurement metrics were structured to include the value of avoided GHG emissions. Such a framework would assist federal and state regulators in developing a full treatment of the GHG benefits of energy efficiency measures as those measures are stacked up against power generation on a cost-benefit scale.

We also support provisions ensuring that energy savings will be delivered to all customers, regardless of geographic location, and treating energy efficiency and renewable energy separately. Energy efficiency opportunities are available in every state, service territory, home and business across the country, and we should be capturing all of them that are cost effective, for the good of consumers and the

environment. Each state's distinct characteristics – climate, economy, age of building stock, etc. – need to be considered in creating effective efficiency programs. In contrast, a national regime of tradable energy efficiency certificates would blur these differences and create a distorted market, with unintended consequences such as artificially high prices for energy efficiency measures where they should be cheap and undervaluing further measures in states where established energy efficiency programs have already made inroads.

c. Buildings

Buildings account for approximately 39% of total energy consumption in the United States, and more than half of all energy use in states such as my own. The ACES bill sets sensible and readily achievable targets for building code energy efficiency improvements that should contribute significantly toward the emissions reduction targets of the bill. Section 202 (P158) sets targets relative to IECC 2006 and ASHRAE 2004 codes for residential and commercial construction respectively. These building codes authorities are the right entities to reference, but the Committee may wish to use the most recent iterations of their codes as the point of departure. In Massachusetts and other states we are already using ASHRAE 2007 and are in the process of adopting IECC 2009. We would recommend these updated codes as the basis for new Federal efforts while maintaining the 30% and 50% improvement targets.

As the Committee considers additional incentives or inducements for states to move quickly to adopt advanced building codes, we believe the legislation could be strengthened with a better defined mix of funding, technical assistance, reporting and penalties for states as they move forward to adopt such codes.

We fully support the bill's requirements that states not only adopt building codes that meet the federal targets, but that they also achieve high levels of compliance with the targets, and provide training for building code inspectors in the energy code. However, the maximum level of federal funding provided to each state that can be used for training, $500,000, may be insufficient.

Massachusetts is also currently proposing a "stretch" energy code that goes beyond the base state code, and could be adopted at their option by cities and towns. We believe this stretch code provides a good potential model for even more advanced energy codes at the federal level. A nationwide team of code experts and consultants has assisted Massachusetts, and several other states, in their efforts to develop model 'stretch' codes.

Our proposed "stretch" energy code is 20% better than ASHRAE 90.1-2007 for commercial buildings and roughly 20-25% better than IECC 2009 (or 30-35% better than IECC 2006) for residential buildings. In addition to these percentage improvements we are making two equally important shifts to performance-based

codes – tied to real-world testing of building envelopes, and to a requirement for third party energy code certification, to ensure that standards are met in the field.

Beyond the stretch code that we expect to implement this year, our Zero Net Energy Building Task Force has recommended instituting more comprehensive performance-based building energy metrics, in the form of energy use per square foot per heating and cooling degree day, by building type. This builds on existing work by the Department of Energy, and we strongly encourage federal code development in the coming years to build on this performance-based approach.

Finally, in addition to taking the best of the IECC and ASHRAE codes into consideration, we recommend adopting elements of the National Buildings Institute 'Core Performance' prescriptive code for commercial buildings, as we have done in our stretch code development.

It is worth noting here that we all will have to continue to work toward a climate and energy policy that adequately accounts for the emissions from unregulated heating fuels like heating oil and propane. To complement the overhaul of electricity and natural gas in the draft bill, we support federal measures to provide incentives for renewable heating technologies such as clean burning biomass (condensing wood pellet and wood chip boilers), and state of the art solar thermal technology. Unfortunately, we currently import these technologies from Europe and would welcome federal initiatives to grow the market and industrial base for these emerging renewable heating technologies in both residential and commercial buildings. One option is to include renewable heating technologies in the Federal renewable portfolio standard on a kilowatt-hour-equivalent basis, an approach that has been successfully adopted by 10 US states to date.

d. Transportation and Clean Fuels

Greenhouse gas emissions from transportation represent at least 30% of the greenhouse gas emissions in many states, and this percentage is increasing every year. In order to meet a goal of 83% reduction in greenhouse emissions overall, ways to reduce emissions from the transportation sector will need to be found.

There are three principal strategies for reducing transportation related emissions: cleaner vehicles, cleaner fuels and reducing vehicle miles traveled. ACES addresses each of these strategies.

<u>Cleaner Vehicles/Vehicle Standards</u>
ACES breaks new ground by requiring USEPA to promulgate greenhouse gas standards for various classifications of mobile sources. We encourage clarification on the following items:

1. Section 221 specifying that its goal, and primary metric, is the limitation of greenhouse gas emissions;

2. States retaining their authority under Section 177 to adopt and enforce the California standards;
3. Specific language requiring that federal GHG standards be at least as stringent as the California standards; and
4. Including greenhouse gas standards for medium-duty vehicles.

Transportation Efficiency and Vehicle Miles Traveled (VMT)

Improving the efficiency of the transportation system and reducing vehicle miles traveled (VMT) are the most challenging parts of reducing transportation emissions. Success in this arena will involve the concerted effort of environmental, transportation and economic development agencies at the regional, state, and federal level. ACES leads toward this success by requiring that state transportation greenhouse gas goals be developed in concurrence with air quality and transportation agencies and in consultation with Metropolitan Planning Organizations (MPOs) and the public. We encourage additional provisions that would further increase the likelihood of reaching these goals by, for example, tying federal highway funds to GHG reductions, including a VMT reduction incentive and target in ACES, and allowing state flexibility in establishing enforceable GHG goals for transportation at the state level.

Fuel Standards

ACES also breaks new ground by containing a national low carbon fuel standard. Transitioning to a LCFS for the future by building on the current federal Renewable Fuel Standard makes sense. Given the work that California and the northeast states have done on developing a LCFS, we encourage an approach that seeks greater reductions from the fuel sector more quickly. We also encourage the development of a program that recognizes opportunities to promote regional lower carbon fuel choices. These choices include a methodology for considering regional electricity grid emissions and consideration of fuel choices such as home heating oil in the Northeast to prevent leakage of higher carbon fuels out of transportation and into home use.

e. Product Efficiency Standards

President Obama has noted that appliance and equipment standards can save significant amounts of energy and money for consumers, and under his direction the federal government is now poised to act quickly and aggressively to adopt product efficiency standards for all products currently in the queue and many others where energy savings are available. States should also have a clear path to adopting standards that are more stringent, where conditions warrant. In Massachusetts, our legislature has mandated the adoption of a furnace efficiency standard applicable to cold states, where differences in furnace efficiency really matter; we will need a waiver from the existing national-average efficiency standard to fulfill that mandate.

The current ACES draft is strong in this regard, thanks to language on the state waiver process at 213(g), which clarifies the process for states seeking waivers of

preemption; the multi-metric language at 213(a) that allows DOE to have more than one efficiency requirement for a given product (such as water and electric efficiency); and the adjustments for building energy codes at 213(j), which should make it easier for states to meet stretch code targets. Section 215, however, appears to limit the Energy Star program by requiring products to have payback periods of three to five years. We urge you to allow longer paybacks, in order to capture opportunities for long-term efficiency and cost-savings.

IV. Conclusion

Once again, I would also like to thank you for the leadership you are showing on the clean energy opportunity and the climate change challenge before us. In your ACES legislation, you have taken a thoughtful approach to developing a federal-state partnership that advances the goals of clean energy and greenhouse gas reduction. The Commonwealth will be submitting additional written testimony on transmission, the proposed renewable electricity standard and state roles in cap-and-trade. Thank you for the opportunity to comment on this important legislation.